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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,258	12/21/2001	Jesse Ambrosina	56231-336 (MKS-94)	6526

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EXAMINER

MILLER, TAKISHA S

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/032,258

Applicant(s)

AMBROSINA ET AL. 

Examiner

Takisha S Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Reference #'s 124, 126 and 112. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Reference # 121. Is reference #121 a typo for 112, which is the bypass tube, per the specification? A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims, a structure to accelerate the flow of the thermal energy away from the first chamber (cl.6), a thermal ground providing a circular cross-section (cl.7), a thermal ground formed between the valve assembly and the sensor assembly (cl.10) and the thermally conductive element is integral to the exterior of the second chamber (cl.21) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Referring to claim 21, what is the applicant considering to be the conductive thermal element? Referring to claim 10, examiner notices that the thermal ground (148) is formed between the bottom of clamp (140) and the base plate (128).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

✓ Referring to claim 1, it is unclear as to what the applicant is referring to as a “conductive thermal element”. Is it the heat sink (150), the thermal clamp (141) or neither?

✓ Referring to claim 10, it recites the limitations “the second chamber” and “the first chamber” in lines 14-15. There is insufficient antecedent basis for this limitation in the claim.

✓ Also, in claim 10, part c, the applicant teaches a thermal ground formed between the valve assembly and the sensor assembly. How is the ground formed between the valve and sensor assembly? It is noticed that it is between the bottom of clamp (140) and the base plate (128).

○ Referring to claim 11, it recites the limitation “the thermal sensor” in line 1. There is insufficient antecedent basis for this limitation in the claim.

○ Referring to claim 14, it recites the limitations “the major axis”, “<sup>✓</sup>the operational section” and “the mass flow sensor” in lines 1-3. There is insufficient antecedent basis for this limitation in the claim.

✓ Referring to claim 17, it recites the limitations “the flow of thermal energy” in line 6. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 6,9-17,20 are rejected under 35 U.S.C. 102(b) as being anticipated by Vavra et al. (5,279,154). Vavra et al. teaches a thermal mass flow controller (10) and housing comprising: a first chamber for enclosing a bypass tube (18), the first chamber/lower chamber including a wall (62)(Fig.2), a second chamber/upper chamber for enclosing a sensor tube (30), the second chamber which is substantially cylindrical (cl.20), includes a wall (64) for mounting to said wall (62) of the first chamber, both walls (62,64) including input (32) and output (38) apertures (Fig.3); a thermal ground/grounded leads (70,72,74) which provide a rectangular cross-section of conductive thermal contact (Fig.2) is located substantially midway between the input (32) and output (38) apertures (cls.2,4,5,11-15)(Col. 5, lines 37-38) and a conductive thermal element (250,254) which is substantially cylindrical (cl.20), composed of a high thermal conductivity material (Col. 6, lines 34-49) in conductive thermal contact with at least a portion of the second chamber (cls.1,3,6,9,17,19), a control valve assembly (14), and a sensor assembly (12,16)(cl.10).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vavra et al. (5,279,154). With respect to claims 7: the shapes of the thermal ground, i.e., rectangular or circular cross-section, absent any criticality, are only considered to be obvious modifications of the shape of thermal ground disclosed by Vavra et al., as the courts have held that a change in shape or configuration, without any criticality, is within the level of skill in the art as the particular shape claimed by Applicant is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide using routine experimentation based on its suitability for the intended use of the invention. See In re Dailey, 149 USPQ 47 ( CCPA 1976 ).

Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vavra et al. (5,279,154) in view of Vu (5,803,507). Vavra et al. teach a thermal mass flow controller housing but does not teach an enclosure that substantially envelops the first and second chambers. Vu teaches an enclosure/cover (26) that substantially envelops a first and second chamber (Figs. 1,2) for the purpose of housing the apparatus.

Since Vavra et al. and Vu are both from the same field of endeavor, the purpose disclosed by Vu would have been recognized in the pertinent art of Vavra et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Vavra et al. to include an enclosure which substantially envelops a first and second chamber as taught by Vu to house the apparatus and protect it from atmospheric conditions.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vavra et al. (5,279,154). Regarding claim 21: Vavra et al. disclose the claimed invention as stated above except for the thermally conductive element (250,252) and the exterior of the second chamber

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forming an integrally molded unitary member. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the thermally conductive element (250,252) and the exterior of the second chamber forming an integrally molded unitary member, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. Howard v. Detroit Stove Works, 150 U.S. 164 ( 1893 ).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Takisha S Miller whose telephone number is (703) 305-4969. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

TM  
September 26, 2002



HARSHAD PATEL  
PRIMARY EXAMINER